

IN THE CLAIMS:

1 1. (Withdrawn) A fusion transcript consisting of a homologue cross-over between two
2 different genes with more than 80% sequence homology in certain regions, in particular regions
3 of cross-over.

1 2. (Withdrawn) A fusion transcript according to claim 1, wherein the two genes are the
2 genes of SCCA1 and SCCA2.

1 3. (Withdrawn) A full length fusion transcript protein between SCCA1 and SCCA2
2 having switched reactive site loops compared to basic promoter.

1 4. (Withdrawn) A substantially full length fusion transcript protein between SCCA1 and
2 SCCA2 having switched reactive site loops compared to basic promoter.

1 5. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 -
2 7 of SCCA1 gene fused to exon 8 of SCCA2 gene.

1 6. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA1
2 gene fused to exon 8 of SCCA2 gene.

1 7. (Withdrawn) A fusion protein according to claim 4 coded by one or more of exons 2 -
2 7 of SCCA2 gene fused to exon 8 of SCCA1 gene.

1 8. (Withdrawn) A fusion protein according to claim 1 coded by exon 2 - 7 of SCCA2
2 gene fused to exon 8 of SCCA1 gene.

1 9. (Withdrawn) A fusion protein according to claim 5, wherein the protein sequence is

2 MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
 3 QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE
 4 LKIANKLFGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
 5 VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF
 6 WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
 7 IDGLQKLEEK LTAEKLMEWL SLQNMRETCV DLHLPRFKME ESYDLKDTLR
 8 TMGMVNIFNG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
 9 VVELSSPSTN EEFCCNHPFL FFIRQNKTNS ILFYGRFSSP

1 10. (Withdrawn) A DNA sequence sequence coding for a fusion SCCA1/SCCA2
 2 protein.

1 11. (Withdrawn) A DNA sequence comprising the nucleotide sequence of exon 2 – 7 of
 2 SCCA1 fused to the nucleotide sequence of exon 8 of SCCA2.

1 12. (Withdrawn) A DNA sequence according to claim 11, wherein the nucleotide
 2 sequence is

3 ATGAATTCAC TCAGTGAAGC CAACACCAAG TTCATGTTCG ACCTGTTCCA
 4 ACAGTTCAGA AAATCAAAAG AGAACAACAT CTTCTATTCC CCTATCAGCA
 5 TCACATCAGC ATTAGGGATG GTCCTCTTAG GAGCCAAAGA CAACACTGCA
 6 CAACAGATTA AGAAGGTTCT TCACTTTGAT CAAGTCACAG AGAACACCAC
 7 AGGAAAAGCT GCAACATATC ATGTTGATAG GTCAGGAAAT GTTCATCACC
 8 AGTTTCAAAA GCTTCTGACT GAATTCAACA AATCCACTGA TGCATATGAG
 9 CTGAAGATCG CCAACAAGCT CTTCCGAGAA AAAACGTATC TATTTTACAA
 10 GGAATATTTA GATGCCATCA AGAAATTTTA CCAGACCAGT GTGGAATCTG

11	TTGATTTTGC	AAATGCTCCA	GAAGAAAGTC	GAAAGAAGAT	TAACTCCTGG
12	GTGGAAAGTC	AAACGAATGA	AAAAATTAAA	AACCTAATTC	CTGAAGGTAA
13	TATTGGCAGC	AATACCACAT	TGGTTCTTGT	GAACGCAATC	TATTTCAAAG
14	GGCAGTGGGA	GAAGAAATTT	AATAAAGAAG	ATACTAAAGA	GGAAAAATTT
15	TGGCCAAACA	AGAATACATA	CAAGTCCATA	CAGATGATGA	GGCAATACAC
16	ATCTTTTCAT	TTTGCCTCGC	TGGAGGATGT	ACAGGCCAAG	GTCCTGGAAA
17	TACCATACAA	AGGCAAAGAT	CTAAGCATGA	TTGTGTTGCT	GCCAAATGAA
18	ATCGATGGTC	TCCAGAAG CT	TGAAGAGAAA	CTCACTGCTG	AGAAATTGAT
19	GGAATGGACA	AGTTTGCAGA	ATATGAGAGA	GACATGTGTC	GATTTACACT
20	TACCTCGGTT	CAAAATGGAA	GAGAGCTATG	ACCTCAAGGA	CACGTTGAGA
21	ACCATGGGAA	TGGTGAATAT	CTTCAATGGG	GATGCAGACC	TCTCAGGCAT
22	GACCTGGAGC	CACGGTCTCT	CAGTATCTAA	AGTCCTACAC	AAGGCCTTTG
23	TGGAGGTCAC	TGAGGAGGGA	GTGGAAGCTG	CAGCTGCCAC	CGCTGTAGTA
24	GTAGTCGAAT	TATCATCTCC	TTCAACTAAT	GAAGAGTTCT	GTTGTAATCA
25	CCCTTTCCTA	TTCTTCATAA	GGCAAAATAA	GACCAACAGC	ATCCTCTTCT
26	ATGGCAGATT CTCATCCCCA				

1 13. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or
2 more of exons 2 - 7 of SCCA1 gene fused to exon 8 of SCCA2 gene.

1 14. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons
2 2 - 7 of SCCA1 fused to the nucleotide sequence of exon 8 of SCCA2.

1 15. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to one or
2 more of exons 2 – 7 of SCCA2 gene fused to exon 8 of SCCA1 gene.

1 16. (Withdrawn) A plasmid comprising the nucleotide sequence corresponding to exons
2 2 - 7 of SCCA2r gene fused to exon 8 of SCCA1 gene.

1 17. (Withdrawn) A plasmid according to claim 13, comprising the nucleotide sequence:
2 of claim 12 ATGAATTCAC TCAGTGAAGC CAACACCAAG TTCATGTTCG
3 ACCTGTTCCA ACAGTTCAGA AAATCAAAAAG AGAACAACAT CTTCTATTCC
4 CCTATCAGCA TCACATCAGC ATTAGGGATG GTCCTCTTAG GAGCCAAAGA
5 CAACACTGCA CAACAGATTA AGAAGGTTCT TCACTTTGAT CAAGTCACAG
6 AGAACACCAC AGGAAAAGCT GCAACATATC ATGTTGATAG GTCAGGAAAT
7 GTTTCATCACC AGTTTCAAAA GCTTCTGACT GAATTCAACA AATCCACTGA
8 TGCATATGAG CTGAAGATCG CCAACAAGCT CTTCGGAGAA AAAACGTATC
9 TATTTTTTACA GGAATATTTA GATGCCATCA AGAAATTTTA CCAGACCAGT
10 GTGGAATCTG TTGATTTTGC AAATGCTCCA GAAGAAAGTC GAAAGAAGAT
11 TAACTCCTGG GTGGAAAGTC AAACGAATGA AAAAATTAAA AACCTAATTC
12 CTGAAGGTAA TATTGGCAGC AATACCACAT TGGTTCTTGT GAACGCAATC
13 TATTTCAAAG GGCAGTGGGA GAAGAAATTT AATAAAGAAG ATACTAAAGA
14 GGAAAAATTT TGGCCAAACA AGAATACATA CAAGTCCATA CAGATGATGA
15 GGCAATACAC ATCTTTTCAT TTTGCCTCGC TGGAGGATGT ACAGGCCAAG
16 GTCCTGGAAA TACCATACAA AGGCAAAGAT CTAAGCATGA TTGTGTTGCT
17 GCCAAATGAA ATCGATGGTC TCCAGAAG CT TGAAGAGAAA CTCACTGCTG
18 AGAAATTGAT GGAATGGACA AGTTTGCAGA ATATGAGAGA GACATGTGTC
19 GATTTACACT TACCTCGGTT CAAAATGGAA GAGAGCTATG ACCTCAAGGA
20 CACGTTGAGA ACCATGGGAA TGGTGAATAT CTTCAATGGG GATGCAGACC

21 TCTCAGGCAT GACCTGGAGC CACGGTCTCT CAGTATCTAA AGTCCTACAC
22 AAGGCCTTTG TGGAGGTCAC TGAGGAGGGA GTGGAAGCTG CAGCTGCCAC
23 CGCTGTAGTA GTAGTCGAAT TATCATCTCC TTCAACTAAT GAAGAGTTCT
24 GTTGTAATCA CCCTTTCCTA TTCTTCATAA GGCAAAATAA GACCAACAGC
25 ATCCTCTTCT ATGGCAGATT CTCATCCCCA, and deposited at ECACC under deposition
26 number ECACC 01031315.

1 18. (Withdrawn) A protein expression system for production of SCCAI/SCCA2 fusion
2 protein.

1 19. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 13.

1 20. (Withdrawn) A recombinant bacteria comprising a plasmid according to claim 14.

1 21. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 13.

1 22. (Withdrawn) A recombinant E. coli comprising a plasmid according to claim 14.

1 23. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.

1 24. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using a cDNA cloning and sequencing analysis of tumor DNA.

1 25. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a Southern blot-technology applied on tumor DNA.

1 26. (Withdrawn) A method for detecting the gene rearrangement forming the

- 2 SCCA2/SCCA1 fusion protein using a Southern blot-technology applied on tumor DNA.
- 1 27. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using a PCR-analysis technology.
- 1 28. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using a PCR-analysis technology.
- 1 29. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA1/SCCA2 fusion protein using an amino acid sequencing technology.
- 1 30. (Withdrawn) A method for detecting the gene rearrangement forming the
2 SCCA2/SCCA1 fusion protein using an amino acid sequencing technology.
- 1 31. (Canceled)
- 1 32. (Withdrawn) A method for detection the SCCA2/AI fusion protein using Western
2 blotting.
- 1 33. (Withdrawn) A monoclonal antibody specific for SCCAI/SCCA2 fusion protein.
- 1 34. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCAZ fusion protein.
- 1 35. (Withdrawn) A polyclonal antibody reactive with SCCAI/SCCA2 fusion protein.
- 1 36. (Withdrawn) A monoclonal antibody specific for SCCA2/SCCA1 fusion protein.
- 1 37. (Canceled)

38. (Withdrawn) An immunoassay using a monoclonal antibody or polyclonal antibody specific for SCCA2/SCCA1 fusion protein for detecting the presence and concentration of SCCA2/SCCA1 fusion protein.

39. (Currently Amended) A method for diagnosing the presence or absence of a squamous cell carcinoma by detecting the presence and concentration of the SCCA1/SCCA2 fusion protein in a human sample using a monoclonal antibody specific for the SCCA1/SCCA2 fusion protein only, said monoclonal antibody having no affinity for SCCA1 or SCCA2, and wherein the SCCA1/SCCA2 fusion protein is coded by the exons 2-7 of the SCCA1 gene fused to exon 8 of the SCCA2 gene the amino acid sequence of the SCCA1/SCCA2 fusion protein being:

MNSLSEANTK FMFDLFQQFR KSKENNIFYS PISITSALGM VLLGAKDNTA
QQIKKVLHFD QVTENTTGKA ATYHVDRSGN VHHQFQKLLTE FNKSTDAYE
LKIANKLFGGE KTYLFLQEYL DAIKKFYQTS VESVDFANAP EESRKKINSW
VESQTNEKIK NLIPEGNIGS NTTLVLVNAI YFKGQWEKKF NKEDTKEEKF
WPNKNTYKSI QMMRQYTSFH FASLEDVQAK VLEIPYKGKD LSMIVLLPNE
IDGLQKLEEK LTAEKLMIEWT SLQNMRETCV DLHLPRFKME ESYDLKDTLR
TMGMVNIENG DADLSGMTWS HGLSVSKVLH KAFVEVTEEG VEAAAATAVV
VVELSSPSTN EEFCNHPFL FFIRQNKTNS ILFYGRFSSP (SEQ ID NO: 1).

40. (Withdrawn) A method for diagnosing the presence or absence of a squamous cell carcinoma by detecting the SCCA2/SCCA1 fusion protein in a human sample.

41. (Canceled)

1 42. (Withdrawn) A kit comprising a SCCA1/SCCA2 fusion protein antibody to be used in the
2 determination of the presence or absence of squamous cell carcinoma (SCC).

1 43. (Withdrawn) A kit comprising a SCCA2/SCCA1 fusion protein antibody to be used
2 in the determination of the presence or absence of squamous cell carcinoma (SCC).

1 44. (Withdrawn) A kit according to claim 42, in that it further comprises antibodies
2 related to SCCA1 and/or SCCA2.

45-50. (Canceled)